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THE ROSE TECHNIC.

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NOW that foot ball has obtained a strong hold upon the public, speculation has started as to its probable future. The great interest of four or five years ago in base ball has certainly subsided in a manner most discouraging to the surviving "cranks," and it is frequently heard that foot ball has displaced it and is to become the national game. As the Thanksgiving attraction it is giving the time honored turkey a hard push for the goal. When thirty thousand people turn out to witness one game, as they did in New York at the Yale–Princeton contest, it needs no argument to convince us that the sport is liked. It is fashionable, and this probably draws forth as many spectators as any merits of the playing. One metropolitan paper says that the game is too complicated to be enjoyed by indifferent spectators and complains of the elaborate system of signals, which, "invented to conceal the tactics of one side from those of the other, serve even better to conceal the beauties of the game from the public who watch it from the stands. Games which are widely known and appreciated have ever had their foundation in their simplicity of action, not in dark and devious complexity."

If this is the case, when fashion ceases to demand the presence of its votaries at the foot ball game we may expect to see the attendance drop perceptibly. On the other hand, the public becoming more acquainted with the fine points, will not be indifferent spectators, and may not this very uncertainty supply the element of interest? During Thanksgiving week, almost without an exception, every newspaper in the country printed in its editorial columns comments upon the game. A few opposed it entirely, others objected to the rougher features, but a large majority favored it as a sport invigorating and manly in its influences. A pointed expression from one is, "Then all honor to the athlete and all pity for the dude! The era of effeminacy is passing and the nation has entered upon an era of mind, manhood and muscle."

Foot ball is likely to remain for some time a popular favorite, but it cannot be said to have taken the place of our old friend. The grid-iron scorching beneath the oppressive rays of midsummer's sun, and the diamond vieing with nature's crystals of frosty fall, the one most uncomfortable to contemplate, the other clearly outclassed, cannot admit of comparison. Reverse the situation, how attractive now the scintillating rays of the sparkling gem cooling our heated brows with its icy glitter, how the grid-iron with its comforting suggestiveness must draw us to it when the storm king's van comes on apace. "There's a time for all things."

If base ball, the spring and summer sport, no more attracts, it is because we have tired of it, because professionalism has lessened our confidence, because the science became too exact to be interesting, foot ball has not displaced it. From the nature of the latter it will repulse professionalism and remain where it now so proudly stands, the college game. Coming at a season when the business world admits little relaxation

it will never pay from a business standpoint with salaried players, the season is too short, the substitute list too large to ever become a barterable product. The present condition of things is the one that will longer retain popular enthusiasm, and is the essential to all true sport in any branch of athletics.

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IT IS an open question whether, in such an institution as Rose where the greater part of the curriculum is necessarily confined to mathematical and technical branches, the student spends enough of his rare minutes of spare time in general reading and brushing up on current affairs. Of course we were all aware that an election was to take place and are now cognizant that it actually occurred; we all know that Yale won the championship; we have heard perhaps of the latest European war cloud, but how many know what the last *North American Review* contained, or the leading articles in the *Engineering News?* The reading room is as essential to the true education as the class room; it is well perhaps to subscribe for a magazine or two of your own; THE TECHNIC is of course upon your list, but use the library's resources as well. *The Campus*, of Allegheney College, in an editorial says:

"The ideal way of reading magazines is in a public library. When you buy a magazine, you feel it your duty to read it from frontispiece to advertisements. You think you are not getting the worth of your money unless you read it thoroughly. Thus, driven by a sort of economic necessity, you read a paper on art, a criticism of Barrie's stories, and a chapter from the memoirs of some princelet with equal relish. It matters not that you vaguely class Xenophon and Rembrandt together as ancient worthies remarkable for something or other; it makes no difference whether you ever heard of Barrie before, much less read his books; nor whether the princelet ruled in Laputa or County Clare, you read the article just the same, and take in a deal that is out of your sphere, useless, often positively detrimental. In the library you read only what you like, and you have the advantage of a much greater variety to select from than is possible to the scanty limits of a private purse. This very richness makes it imperative that you should pick and choose, and if you do not get the very cream from all the magazines, it is no one's fault but your own.

"By pursuing this method and cultivating a catholic taste, you can use the magazines to best advantage. Do not make it a point to read any one journal in particular; make up for yourself each month an eclectic magazine from the contents of all the others. To get the best good from a book you must be its owner; to get it from a magazine you must borrow it."

The question may be asked, "what good is all this if the tendency to a purely technical reading room prevails?" THE TECHNIC does not know that this is the case. If it is, we wish to start a movement in the other direction, and we trust that with the new year a few more high class literary periodicals as well as the daily papers may be added to the reading room. Rose should wish to graduate not only engineers, but men of liberal, well rounded minds.

* * *

THANKSGIVING day in Indianapolis was college day—it was foot-ball day. The exact analogy of these two terms will not be disputed in these times. Colors were disported by nearly every one in the city, in length varying from a half yard to the entire stock of a small establishment; the hotels were filled; the day was to see the culmination of the struggle. The battle was fought and college men—we forget, in other places there are college women—and college women enjoyed a great day. Rose congratulates the victors, its brother "iron-pounders."

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THE *W. P. I.* has kindly called the attention of THE TECHNIC to the fact that, owing to a mistake in their July issue, the comparison of the three courses of instruction as made in our October number was quite misleading. We take pleasure in giving the correction and publish the revised figures in another column, the schedule of the Massachusetts Institute being that furnished by the *W. P. I.*

CO-EDUCATION is in the air. We do not attribute to it the many cloudy days recently, they are to be expected at this time, and besides it is in the upper currents just around here, and we have not obtained any yet for analysis. From observations at a distance its action appears to be very penetrating, entering college after college throughout the country until we no longer start up in surprise on reading of this or that steel barred, iron clad institution of learning opening her doors responsively to its influence. What effect the carbon laden atmosphere of this vicinity would have upon it should it seek to descend we cannot say, but if it does strike, the Institute's famed loyalty to the fair sex, who we are told sometimes favor it, would no doubt manifest itself. In fact it has been quietly rumored that the recent laying of the cement floors in the shop was a move in the popular direction, as tending to shut out the festive mouse which in ye olden time sportively gamboled in the cracks of the block pavement; mice exercise a decidedly neutralizing effect upon this new atmospheric element. Who knows how soon the fair arm of a technical "co-ed" may be seen toying gently with the mighty sledge, or bringing it down with a tremendous thud upon the glowing iron; when bright eyes will grow dim as they intently follow the devious path of a left-handed thread; when the festive buzz saw may send up its resounding pæan as it drives on through the more yielding medium of the jeweled hand; when the mathematical stumbling blocks may be stumbled over with sympathizing sisters? But our hand trembles and words fail when we think of the dainty creatures endeavoring to pull their way through to the Institute on a rainy day.

* * *

INDIANA COLLEGES are rapidly advancing to a fellowship never before known; the spirit of the times is at work and association is the order. Individuality is as strong or stronger than ever, but it manifests itself in a spirit of friendly rivalry and not in the bigoted self-esteem so often the case when colleges assemble. But a few years ago Indiana colleges seldom met together in any manner; now at least two or three times a year each of the leading institutions meet, and though sometimes these meetings seem to cause an irreparable breach, upon the whole much good is accomplished. The field-day sports witness annually a grand gathering of the clans; oratorical day is rallying time for the literary colleges; the base-ball and foot-ball series bring us together more or less closely—in the latter with considerable force, and all these are of recent date. The members of the faculties have their various societies, mathematical, scientific, and so on.

Latest to organize, the College Press Association is doing a good work, not only directly helping the editorial boards but leading to an interchange of ideas on all matters of collegiate interest. The college paper is in the forefront of all college enterprises, with the makers of these papers in close relationship; intercollegiate events will partake of the same spirit and a great object is attained.

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THE frontispiece of this issue from negatives taken by Mr. W. H. Waite, '93, gives three scenes of the Wabash-Rose football game. THE TECHNIC does not attribute any great excellence to this particular contest, but presents the cut as it is of our first venture in inter-collegiate work in this line, as giving typical scenes of a game so attractive to college men, and lastly as a view of the relative locations of buildings and athletic field which may prove of interest not only now but in later years.

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WE are sorry that arrangements have not yet been completed for putting our exchanges in the library. The papers are ready as soon as we are allowed space for them.

* * *

CHRISTMAS joys and holiday pleasures are the silver lining, but this side of the cloud is as black as ever.

GERMAN STUDENT LIFE.

BY PROFESSOR J. A. WICKERSHAM.

It is quite likely that many student customs have been changed since I was at Leipzig and Berlin, some twelve years ago. Of course the fundamentals, drinking, smoking and duelling, will go on forever; they are *de riguer*, but it is to be hoped that some of the minor student conveniences have been improved. That inevitable oil cloth bag, containing paper, pens, pen-holders, pencils and a wooden inkstand, all rolled up together and carried under the arm, let us hope, has been replaced by something more convenient and sightly. The ink bottle has certainly been exchanged for a fountain pen, and the ugly ink blotches planed off the tops of the long wooden desks and benches.

A lecture room in Leipzig twelve years ago was a rather primitive affair. The students come in at the rear, take their places, unroll their oil cloth *mappes*, get out their "hefts" of paper, their pen and ink bottle, and await the arrival of the professor. Those that come in late find it easier to mount the tops of the desks and walk across them than to go around. It used to be a motley assemblage of old and young of all the nations of Europe and America that convened in some of the Leipzig lecture rooms. Of course the Germans predominated, then came in point of numbers Russians, Americans and Greeks. Pretty soon the professor entered, took his place sitting or standing in a sort of pulpit or cathedra, unrolled his manuscript, and without the least attention to his audience, began reading. The room grows quiet, everybody is writing away for dear life, though of course those who have already purchased the lectures in book form, or engaged a copy of a stenographer, are less careful to get everything down. Some belated student opens the door and comes in, slips, strikes his toe against an obstacle, lets the door be heard in closing; or comes down too heavily as he alights upon his bench from the top of the desks he has been striding across, and instantly a hundred feet are raked across the grating sand of the floor, a storm of hisses escapes from various parts of the room, and scowling faces are turned upon the unlucky offender. Entirely indifferent, he unrolls his *mappe* and goes to work. The room grows hotter and hotter, the air thicker and thicker; the ceiling is low, there is no ventilation; at the end of the hour there is a rush for the door and everybody breathes with relief for a few minutes the fresh air of the court yard.

The order in the lecture room is good, the students visiting any disorder with positive signs of disapproval. It is to be hoped, too, that bicycle riding has come into fashion there as here, and driven out canes and dogs. Students' dogs were for a long time a serious nuisance in some of the smaller universities, where each student felt it a matter of personal dignity to have a Saint Bernard at his heels.

The private life of the German student is not very different from that of American students. Chumming is not practiced, however. Every student must have a room to himself, a most excellent custom, advantageous from every point of view. It should be followed here. The little saving in expense by chumming does not compensate the loss of privacy and control over one's time. The student's room is furnished about as here, with the exception of one article, that is the sofa. No German student would hire a room that did not contain a good sofa. It is considered indispensable, and rightly too, for it prevents the use of the bed for lounging purposes, and thus materially helps to keep the room in order, and enables a man to stretch himself out and rest in a few minutes, without the necessity of tipping himself back in a chair and getting his feet on the window sill or bed post. It would, in the long run, be a great saving to housekeepers who rent rooms to students to provide sofas for them, and I advise every student to insist on having one in his room. If one really needs rest, the recumbent posture is the best way to get it. Breakfast and supper generally are included in the price of

lodging, and are taken in the room. A student's acquaintance at his lodging will seldom extend beyond that of his servant girl. But what a blessed creature she is! and what will she not do to serve Meine Herrschaft?—mail his letters, black his boots, dust his clothing, help the express man up with his trunk, unpack his things and arrange them for him, pack them all up and send them after him safe and sound when he goes home. She will do any sort of errand in the world for him, and all for good will, a Christmas gift and a possible fee at parting.

There is not very much to develop manliness in the ordinary round of a German student's life. Athletic sports are not practiced to any great extent except fencing. This is good exercise and unobjectionable, except that it leads to duelling, and even that is not altogether bad. As practiced it it is almost entirely harmless, the face being protected in such a way as to admit of a cut only where scars are desired, principally on the nose and the cheeks. About the third day after a student has received a cut in a duel, and when the wound has begun properly to heal, he pulls it apart, so that the scar may be broader and more noticeable. The faces of a large proportion of German students are scarred into absolute ugliness. It is inconceivable how they can take pride in such mutilation of their own faces, but many of them undoubtedly do. A certain conventional honor, a kind of class or secret-society spirit, and a restraint upon the tendency to avenge personal insults on the spur of the moment, are about the only good points of the practice.

It was always incomprehensible to me how German students of a certain class manage to swallow such quantities of beer. Fifteen to twenty schooners at an evening sitting are not anything rare. The continual process of beer drinking must have developed in them a second stomach, like that of the camel. The sort of evenings spent at the *kneipe* or society rooms are not conducive to attention at lectures the following day, and, as many students spend most of their time here, the result is they do not learn anything of consequence from the lectures, though usually in the third year they do begin to pay some attention, even to study a little, and finally prepare a thesis. In connection with this they are examined for the Doctor's degree. This degree, then, for the ordinary German student, represents a very small outlay of mental energy during his university course. The fact of it is the best higher teaching in Germany is done in the Gymnasium and the Real school. Here are found that thorough, systematic drill, consisting of recitations, explanations and quizes, that we have in our colleges and better high schools, and which form the real educational capital of every educated German, no matter how much he may expand it or modify it by a university course.

Now it must not be understood that all German students are like the typical ones I have been describing. On the contrary, there is fortunately, a large number of exceptions, of students who have been inoculated with the noble rabies of learning. Such students find in the university everything to develop their madness. Of such the university makes scholars in the best sense of the word. It does the same thing for its professors, who are so situated as to be constantly excited to original investigation, and who are not sapped of their energies by the drill and drudgery of teaching. Those students who really wish to advance are not kept back by the indifference of the many.

I must not forget to speak of the seminaries which most professors arrange for outside of their lecture courses. These are composed of the more earnest students in each particular line, who meet the professor on a more equal footing than do those of the lecture rooms. They have the advantage of his personal acquaintance and direction; they present papers and enter into discussions, the professor simply acting as moderator or chairman. The seminary is an admirable method of advancement and instruction.

As a general thing the students of the larger universities have no personal acquaintance or connection with the professors, through the lecture room at least; they do have however occasionally in the laboratories. For this reason some prefer the smaller universities, where such contact is possible and more frequent. Every professor has his famulus, who will present requests, ask for in-

formation or advice, or in any way represent a particular student to the lecturer.

On the opening of the session, new students are allowed the right of *hospitiren*, of visiting around for a few weeks, that they may find out what courses of lectures they would like to hear; and they not unfrequently *umsatteln* or change courses if they desire to do so. There is great irregularity as to opening and closing courses of lectures. At the advertised time of opening, a visitor to the corridors of the university is not likely to see any body, unless it be a possible bedell or janitor. In a few days he may discover a miniature notice on the bulletin board. If he is fortunate enough to be able to decipher it, he finds its purport to be that Professor so and so *contemplates* beginning his lectures on such and such a date, generally some ten days or two weeks later. These placards increase in number from day to day, each lecturer following his own pleasure or convenience as to beginning. At the close of the term, same irregularity; there is no formal closing or commencement. When the lecturer has finished what he has to say, he ceases lecturing, and the course is ended. Students pass up their record books to the famulus, who hands them in to the professor, who signs them, thus testifying that these students have been in faithful attendance, of irreproachable demeanor, &c.

These record books are of great importance, for most students divide their course between two or more universities, and, without the record books, they could not prove attendance, and obtain the final privilege of examination for a degree. Such privilege is granted on presentation of a suitable thesis, accompanied by the above mentioned records and a vita or autobiography composed in Latin, and a fee, most of which is to cover expense of the publication of a few hundred copies of the thesis.

German universities are state institutions, receive state appropriations, and tuitions are not high. Forty dollars a year will cover university charges, ordinarily. The university organization forms an independent state, its students become its legitimized citizens, and as such, are under the jurisdiction of the university courts, and not under the town authorities. They may be arrested by the police, but, on presentation of their legitimation papers, must be turned over to university authorities, who may try, convict and sentence them, not unfrequently incarcerating them in the university lock-up, from between the bars of whose windows one may often see a gaunt face looking longingly down on the university court yard.

When Heine went from the university of Göttingen on a foot tour through the Harz mountains, he met some travelers going to Göttingen, who were very solicitous to find a good, respectable hotel in that place. The students there call the university jail the hotel de Brühbach, the Brothbrook hotel. He recommended these travelers to inquire of the first, best-looking student they should meet, their way to the Brothbrook hotel. The ladies wanted to know whether nice people put up at that hotel. This Heine affirmed positively, saying he had often put up there himself, an instance in which the passive voice would more nearly have expressed the truth.

I must say, in conclusion, that the examination for the degree is a private dress-coat, white-glove affair, in which a single candidate sits down among a faculty committee to be examined by experts on what he knows in certain directions from his three years' study. It will readily be seen that this can be made a very embarrassing situation and also that it might be a merely formal and very easy one. The degree of Ph. D. is of very little importance in Germany, but has much greater respect abroad, especially in this country.

"Where are you going my pretty maid?"
"I'm going a milking sir," she said.
"May I go with you, my pretty maid?"
"The cows would adopt you, sir," she said.

—*Polytechnic.*

THE UNIVERSITY OF CHICAGO.

BY CARLETON B. McCULLOCH, FORMERLY OF '94.

We have recently heard and read much about the great University of the Pacific Coast, founded by Senator Stanford, in memory of his son. For our western states that university will be the Alma Mater of their future statesmen, orators and poets; but in the central part of our country the University of Chicago will hereafter share with Ann Arbor the distinction the latter now enjoys.

The Board of the American Baptist Education Society, in May, 1889, took steps toward the founding of a well equipped college in Chicago. Mr. John D. Rockefeller, President of the Standard Oil Company, gave six hundred thousand dollars for the endowment of such a college, and four hundred thousand dollars were raised by outside subscription, Mr. Marshall Field, of Chicago, contributing one-third of this sum. As time passed, however, it became apparent that more than a *college* would be needed to meet the demand, and those in charge determined that, if possible, a *university* should be founded on the shores of Lake Michigan. Through the splendid generosity of Mr. Rockefeller it has been made possible. In addition to the amount he had already given, he subscribed the magnificent sum of a million of dollars—altogether making the largest amount ever given at one time by any one man for such a purpose. The only conditions imposed were, that at all times two-thirds of the Board of Trustees, and also the President of the University, shall be of the Baptist faith; and secondly, that the major part of the gift shall remain intact, as an endowment fund, and the income only, be used.

In accordance with these provisions, Dr. Harper, of Yale University, was selected to fill the President's chair, and under his direction the other members of the Faculty were chosen, the courses of instruction mapped out, and the details of administration arranged.

The courses may be briefly outlined as follows:

There are four colleges, classified as to the branches taught in each, and named the colleges of

(1). Liberal Arts, leading to degree of B. A.

(2). Literature. (Modern Languages, Literature and History.) B. A.

(3). Science. (Mathematics, Physics, etc.) B. S.

(4). Practical Arts. (Mechanics and a business education.)

Each of these four colleges is again divided into two departments. The Academic, corresponding to and comprising the Freshman and Sophomore years, and the University, comprising the Junior and Senior years. These two departments are entirely distinct, each having its own Dean and Faculty. The advantages of such a division are obvious, but may be cited.

First. It secures for each student, even in the largest colleges, all the benefits, such as individual attention, etc., possessed by a smaller institution.

Second. It permits, in the Academic department, the use of stricter methods of instruction and discipline, while the university colleges may pursue a more liberal course.

Third. It affords opportunity for men from other institutions to do work of a more distinctively university character.

It is hoped that the work of the Academic colleges may be done, so far as is possible, in affiliated colleges, or outside institutions, with which mutually satisfactory terms can be made. The Chicago University will then be able to devote its energies to work of a higher order.

The University Extension department is an important branch of the University's work, and already the movement is extending to the larger cities of the state. Work thus done is recognized by the University, and under certain conditions accepted as a part of the course.

A unique feature of the institution, to some extent the outgrowth of the summer schools recently inaugurated by the larger colleges of the

country, is the provision for holding the University in session throughout the entire year. The year is divided into four quarters of twelve weeks or two terms, each, with a week's vacation intervening between the quarters. A student is required to attend three full quarters, or thirty-six weeks, the remaining quarter constituting the long vacation, and may be taken all at once, at any season of the year, or in two parts of six weeks each, as the student may elect. If the college physician will certify that the continued work will not be injurious to the general health of the student, he may attend the University for four quarters of the year, and complete his course in three years. The members of the Faculty are also benefited by this arrangement. No professor is required to lecture more than twelve hours a week or more than thirty-six weeks a year, and for extra work he receives a pro rata increase in salary. If he so wishes, however, he may work the entire forty-eight weeks each year, for the three years, thus becoming entitled to a year's vacation on full salary.

As regards admission to the University, examinations are held in March, June, September and December, but special examinations may be held at any time on payment of an additional fee. Certificates or diplomas from accredited institutions are accepted in lieu of examinations. The subjects required for entrance to the Academic department of, for example, the Scientific School, are, besides the rudimentary branches:

MATHEMATICS—Algebra through Quadratics.
Plane Geometry.
Solid Geometry.

NATURAL SCIENCE—Physics or Chemistry. (Fifty experiments and record of same.)

To the Polytechnic student a copy of the Junior and Senior Course in Engineering would be interesting.

CIVIL ENGINEERING:—
Topographical Survey.
Railroad location.
Geodetic Survey.
Mechanics of Materials.
Stereotomy.
Stresses in Roofs and Bridges.
Bridge Design.
Hydraulics.
Sanitary Engineering.
Roads, Streets and Pavements.
Railroad Construction.
Bridge Construction.
Graphical Statics.
Retaining Walls and Arches.
Hydraulic Motors.
Water Supply of towns.
Harbor Improvements.

MECHANICAL ENGINEERING:—
Thermo Dynamics.
Electricity and Magnetism.
Mathematical Electricity.
Machine Design.
Steam Boilers.
The Steam Engine.
Mechanical Technology.
Kinematics.
Mechanics of Machinery.
Measurement of Power.
Graphical Dynamics.
Shop Visits.
Naval Hydromechanics.
Link and Valve Motions.
Pumps and Pump Engines.
Tests of Machinery.

The results of the examinations at the end of each quarter are graded A, B, C, D and E. Any student receiving D must make a better mark at a special examination or take the subject over; those receiving E, will, in no case, be allowed to pass.

Regarding the requirements, aside from the studies, each student in the Academic colleges is allowed four unexcused absences per term (six weeks), but these may not immediately follow or precede a vacation, nor may a student have two consecutive unexcused absences in any one subject. In the University colleges the number of unexcused is increased to six. Every student must attend chapel service daily, at half past twelve, and Sunday at nine. All are expected to attend at least one church service, but no particular denomination is specified. Indeed, although the University of Chicago is a Baptist institution, the chapel exercises and Divinity School are the only places where it is shown.

Dormitories, both for ladies and for gentlemen, are being erected, and rooms here may be secured at prices ranging from fifty cents to three dollars per week; a twenty per cent. reduction is allowed

where a student occupies a room continuously for thirty-six weeks. Professors of the University will have rooms in the dormitories and have charge of the students living there, probably in a manner resembling the Rugby præpostors of Tom Brown's time—minus, of course, the fagging.

The charge for tuition is twenty-five dollars a quarter, and a quarterly incidental fee of five dollars, covers all extras. The total cost of a year's (three quarters) attendance at the University is given herewith:

	Low.	Average.	High.
Tuition	$75 00	$75 00	$75 00
Incidentals	15 00	15 00	15 00
Rent and care of Room	18 00	72 00	100 00
Board	90 00	175 00	225 00
Fuel and Light	15 00	20 00	25 00
Washing	15 00	25 00	35 00
Text books and Stationery	10 00	20 00	50 00
Sundries	10 00	40 00	60 00
Total	$248 00	$442 00	$585 00

To encourage good and thorough work, and afford opportunity for poor students to attend the University, scholarships have been established of an annual value of one hundred dollars. These will be awarded to undergraduates on the basis of merit alone, and in return for the scholarship the holder is expected to do some slight work for the University, such as tutoring, marking examination papers, etc. There are also "fellowships" awarded to graduates under similar conditions, which are equal in value to the scholarships, and carry with them similar obligations. As a further assistance to poorer students, there is an employment bureau which can furnish work to a hundred students, of a nature that will not interfere with their school work and will bring them at least one hundred dollars a year.

The physical side of education is thoroughly recognized and provided for. The college gymnasium is not yet erected, but will be so soon as some of the more important buildings are completed, and no expense will be spared to make it the very best. Mr. Alonzo A. Stagg, the famous Yale pitcher, has charge of this branch. He has already organized a foot ball team, which can boast that it has at least won as many games as it has lost, which is certainly encouraging, considering that the University opened October 1st. Mr. Stagg has also shown his energy in finding a yell for the 'Varsity, this business evidently belonging to his department.

The war cry which will hereafter resound from the leather-lunged sons of the Windy City, on the battle-field, at oratorical contests, and other proper places, will be as follows:

Chi ca′ go! Chi ca′ go!
Chi ca′ go′ go′!!
Go it, Chi ca′! Go it, Chi ca′!!
Go it, Chi ca′ Go!!!

INCANDESCENT LAMPS.

A DECISION CONCERNING THEIR INVENTION.

A matter of great interest in relation to the subject of electric lighting was decided in the United States Court of Appeals for the Second Circuit, on October 4, 1892.

Suit was brought in the U. S. Circuit Court, Southern District of New York, by the Edison Electric Light Co., against the United States Electric Lighting Co., for infringement of patent number 223,898, dated Jan. 27, 1880. The suit was decided in favor of the Edison company and the United States company appealed to the United States Court of Appeals, where the decree of the lower court was affirmed.

The claims of the patent on which suit was brought are as follows:

"1. An electric lamp for giving light by incandescence, consisting of a filament of carbon of high resistance, made as described and secured to metallic wires, as set forth.

"2. The combination of carbon filaments with

a receiver made entirely of glass, and from which receiver the air is exhausted, for the purpose set forth.

"3. A carbon filament or strip coiled and connected to electric conductors so that only a portion of the surface of such carbon conductors shall be exposed for radiating light, as set forth.

"4. The method herein described of securing the platina contact-wires to the carbon filament and carbonizing of the whole in a closed chamber, substantially as set forth."

Defendant's lamp did not infringe either the third or fourth claims, nor, according to the ruling of the circuit court, did it infringe the first claim. The second claim only remained for consideration.

The testimony in the case shows that prior to 1879 no commercially successful incandescent lamp had been produced, and all experiments seemed to point to the conclusion that the successful lamp would be a modification of the arc.

On May 28, 1879, Edison was granted a patent, in France, upon a lamp in which the filament was made of platinum wire of from two to three hundred ohms resistance. In this form of lamp the wires were freed from occluded gases by heating them in a vacuum, and then sealing them in this vacuum. This platinum lamp was not a success, however, and Edison turned again to carbon. Up to this time the carbon used in incandescent lamps had been "pencils" or rods, rather than filaments, and it had been found that if the incandescing pencil or rod was made small enough to use the electric current with any approach to economy, they were very unstable. Various methods had been employed to prevent their disintegration, the favorite one being to place an atmosphere of nitrogen in the lamp case.

During the course of his experiments Edison found that "The use of a gas in the receiver at the atmospheric pressure, although not attacking the carbon, serves to destroy it in time by 'air washing,' or the attrition produced by the rapid passage of the air over the slightly coherent, highly heated surface of the carbon." Edison therefore departed from the custom, placing a carbon "filament" in a sealed glass bulb exhausted to one-millionth of an atmosphere," and connected this filament to platinum leading wires which were sealed into the glass receiver.

The invention consisted, therefore, in the discovery that the seemingly unstable carbon filament, conforming to the necessary conditions for the economical conduction and subdivision of the electric current, namely, a high resistance with small radiating surface, could, if it were properly carbonized and inclosed in a nearly perfect vacuum, be repeatedly heated to incandescence without disintegration.

The defendant contended that there was no invention in substituting for the well known platinum wire a carbon conductor of any size, but Judge Lacombe holds that the claim may be paraphrased as follows:

"The combination of carbon, filamentary or thread-like in size and properly carbonized, used as an illuminant in an incandescent lamp, with a receiver made entirely of glass, and conductors passing through the glass, and from which receiver the air is exhausted to such an extent that disintegration of the carbon due to the air-washing action of surrounding gases or to any other cause is so far reduced as to leave the carbon practically stable."

With this construction it seems that all incandescent lamps, in which a carbon filament is placed in a vacuum in an all-glass receiver, in connection with conductors passing through the glass, are subsidiary to the Edison patent.

The full text of this discussion may be found in the Patent Office "Official Gazette" of October 25, 1892.

A. M. H., '93.

QUITE FEMININE, YOU KNOW.

First came the spotless full dress shirt,
Then four-in-hand, by chance,
Soon "gallusses" were quite the rage,
And it will next be—? ? ! !—*Cynic.*

ALUMNI DEPARTMENT.

THE WORLD'S COLUMBIAN EXPOSITION.

BY S. S. FRANK, CLASS '92.

One may read descriptions of the buildings of the World's Columbian Exposition and of their great extent, with dimensions and comparisons, but no matter how vivid the description, it is almost impossible to gain a correct conception of their massiveness until one has seen them. Even then it is difficult to realize their size, for there are no ordinary sized structures near to compare them with. To a person standing in one end of the big Manufacturers' Hall a team of horses going across the other end appears like a team of goats drawing a small boy's express wagon, while the workmen under the roof look like brownies.

A description of the great buildings would necessarily encroach too largely on the valuable space of THE TECHNIC, therefore a few words or dimensions concerning a few of the largest must suffice. Of all the great buildings of the "White City", as Jackson Park has appropriately been called, the famous Manufactures and Liberal Arts building is king, not only over these, but over any others ever erected. It is 787 by 1,687 feet. The greatest feature in engineering in this structure is the fact that the entire roof which is 246 feet from the floor and almost entirely of glass, is supported by immense iron arches spanning the entire width, leaving the floor entirely free from posts or pillars. The building covers about thirty acres, and with the galleries has floor space of over forty acres. "Wouldn't this make a great gymnasium?" is generally the first expression of the young collegiate visitor after recovering from his surprise on entering. These arches are thrice as large as the largest ever before constructed, those being in the passenger station at Jersey City.

Among the other large buildings are Machinery Hall, which is 984x1,397 feet; Transportation, 256x960 feet, and its annex, which is larger than the original building; Agricultural, 500x800 feet, and an annex which is 312x550 feet; Horticultural, 250x997 feet; Mines Building, 350x699 feet; Electricity, 345x690 feet; Forestry Building, 208 x528 feet; Art Gallery, 320x500 feet.

Electricity will be a great feature of the Exposition and preparations are being made for one of the grandest displays ever attempted in this line. There is an army of men employed in the electrical and engineering department and the work progresses rapidly. It will require 250 miles of wire for the arc lighting, and the incandescent, the police and fire alarm, and telephone systems will require even much more. All wires (with the exception of a few in one district) are laid in underground ducts. A subway for electric wires 7x7 feet, extending the entire length of the grounds, forms the main artery of this system, the ducts forming veins running in every direction.

The Westinghouse Electric and Manufacturing Company has the contract for the incandescent lighting. The wiring for this system is being done by the New York Insulated Wire Company to whom the contract was sub-let. The arc light, the police and fire signal, and telephone systems are controlled by the World's Columbian Exposition Company. The Westinghouse contract calls for 90,000 lights, which means from 9,000 to 10,000 H. P. for this lighting alone. The current will come from twelve Westinghouse alternating current dynamos of 10,000 lights capacity each, and two of 4,000 lights capacity. Two of these 10,000 light machines are to be connected tandem to a monster 2,000 H. P. triple expansion engine being built by the E. P. Allis Company. Six of these generators will be directly connected each to a 1,000 H. P. Westinghouse engine, and the remaining four will each be run by 1,000 H. P. engines of different firms.

It will be unnecessary for the young man who takes his best girl for a stroll through the grounds every evening to consult the calendar as to the stage of the weather; every night will be "moonlight," for the park will be literally studded with arc lights. The lamps are placed on fancy and attractive cast iron posts surmounted by a cage.

There are to be about 4,600 arc lights. The power will come from fifty light machines of various types, including the Fort Wayne, Standard, Brush, Thomson-Houston, Excelsior and Western Electric Company. These machines are all rented to the Exposition Company for use during the Fair. Besides, there will also be about twenty generators, for power, exclusively, ranging from 80 to 225 k. w. each. The police and fire signal system is extensive, and is very important, inasmuch as every precaution must be taken against fire, owing to the inflammable nature of the material of the skeletons of the buildings. There are six distinct circuits, so distributed that the alarm boxes in any district alternate on at least two circuits. The object of this arrangement is to guard against accident, such as a break in a line, in which case one could go to the next box and catch a different circuit.

Another interesting feature in connection with the electrical exhibit is a powerful search light, which is installed in the dome of the Transportation Building. It was built by Schukert & Co., Nürnburg, and is of 300,000 c. p. The positive carbon is $1\frac{1}{4}$ inches, and the negative $\frac{3}{4}$ inch diameter, and the arc $1\frac{1}{2}$ inches in length. It is claimed that the light can be seen for 40 miles. During the dedication ball at the Auditorium, the light was thrown on that building, a distance of seven miles, and illuminated it brilliantly.

There will be more than forty sets of boilers of various makes, most of which are already in position. The fires are to be fed with oil which is piped to reservoirs on the grounds and thence pumped to the boilers. There will be from 25,000 to 30,000 available horse power. Besides the 2,000 H. P. Allis and the ten 1,000 H. P. engines mentioned, there will be about forty-five more ranging from 150 to 600 H. P. The large Allis engine will have a thirty-foot fly wheel, making fifty revolutions a minute, and a five-foot leather belt 160 feet long.

An interesting feature during the Fair will be the sliding railway, a French idea. It is an elevated structure extending along midway Plaisance (a distance of one mile). The rails are of peculiar form, fitting into a "shoe" on the car. Water is maintained between these under high pressure, thereby allowing the car to slide on a thin sheet of water. Inside the grounds visitors will be transported on an elevated electric road which encircles the park.

A large per cent. of the men employed in the engineering departments are graduates of technical schools, Cornell and Boston Tech having perhaps the largest representation. It is also a notable fact that each is a member of a fraternity. Whatever may be said as to the advantage or disadvantage of fraternities in colleges or technical schools, it is nevertheless a fact that membership in a fraternity is a great help to the graduate, not only in society, but very often in business. At some time during the Fair there will be held in Chicago a grand gathering of college fraternity men. At this convention nearly every college and technical school in the United States will be represented. When, however, the latter come to join hands there will be a great gap in the circle and it will need Rose Polytechnic, their leader, to fill it.

At one of the last meetings of the class of '92 it was suggested, since each one expected to visit Chicago at some time during the Fair, that arrangements be made for all to be there at the same time and hold a class reunion. Why not extend this to a general re-union of R. P. I. graduates and students?

It may seem to the reader that this article has digressed somewhat from the original subject, but let us hope no harm has been done.

NOTES.

Mr. W. H. Palmer, '87, has designed a line of dynamos and motors of a somewhat new type for the Omaha Consolidated Electrical Company; also a new motor switch. Mr. Palmer is superintendent of the works and promises us a description of the above machines in a future issue.

Mr. J. R. Leighty, formerly of '91, is connected with the "Drainage Canal" out of Chicago, and may be addressed in care of Engineering Dept. Drainage District, Chicago, Ills.

Mr. Warren Hussey, '92, is visiting at his home in this city.

Mr. W. S. Menden, '91, is now located with John A. Cole, civil and consulting engineer, Chicago, Ills. He has been there six months and likes his work. His address is 451 Leavitt street.

Mr. Sigmund Frank, '92, whose article on the "World's Columbian Exposition" appears in this issue, has changed his address to 4154 Berkley avenue, Chicago, Ills.

Mr. Taro Tsuji, '90, has charge of the survey of twenty-five miles of a large river near the city of O'Koyawa, Japan. This survey is preliminary to the improvement of the navigation of the river. The work on this section is to be done this year.

Mr. C. Young, '92, Milwaukee, Wis., recently paid his classmates, in Chicago, a short visit, and they report that Milwaukee seems to agree with him.

Mr. V. K. Hendricks', '89, address is box 313 Fairhaven, Wash.

Mr. J. T. Wilkins, '86, recently paid Rose a brief visit.

ATHLETIC DEPARTMENT.

WABASH VS. ROSE POLYTECHNIC.

The first game of foot ball in which the school eleven could compare strength with another college was played on the campus Saturday, November 12th, about three hundred people being present. The day was favorable for a good contest and the teams being so evenly matched made the game of special interest. At 2:40 the teams lined up as follows:

WABASH	POSITIONS.	ROSE POLYTECHNIC
C. Gentry	Right End	O'Brien
Stott	Right Tackle	McCulloch
Ashman	Right Guard	Mead
Meteer	Center	ReQua
L. Gentry	Left Guard	McGregor
Mutz	Left Tackle	Smith
Little	Left End	McNaught
Blair	Quarter Back	Anderson
Will Fry	Right Half-back	Comfort
Allen	Left Half-back	Kelsey
John Fry	Full Back	Light

Substitutes—Wabash, Vanderbilt, Pary, Jones and Downey. Rose Polytechnic, Winters, Ridgely and Klinger.

Umpire—Mr. Martin, of Crawfordsville.

Referee—Mr. Jamison, of Terre Haute.

Wabash won the toss, Rose taking south goal. Wabash opened the game by making ten yards with the V, gained the necessary five yards on the next three downs to save the ball, making steady advance chiefly by going through the rush line until near the twenty yard line; Wabash lost the ball on four downs but immediately regained it on a fumble by Rose; Wabash advanced the ball beyond the five yard line but failed to make a touchdown, losing the ball again on four downs. From this point Rose settled to work and until within ten minutes of the close of the struggle played the stronger game; by line work Rose steadily advanced the ball back to Wabash forty yard line where the ball was again fumbled. Wabash returned the ball to within twenty yards of the "Poly" goal, when time was called.

Score—Wabash, 0; Rose, 0.

In the second half Rose took eight yards with V and gained to the thirty-five yard line before losing on four downs; at this point Fry punted over Light's head for thirty-five yards, the ball was recovered and carried back fifteen yards before being stopped. Kelsey was disabled and Ridgely was substituted for half-back. Rose took the ball ten yards into Wabash territory, losing there on four downs. From this time Wabash rushed the game, made the first touchdown and kicked goal seven minutes before the close of the game. The ball was taken to the center of the field; Rose gained ten yards but lost the ball and Wabash moved toward the Rose goal, secured another touchdown and kicked goal. Time was called before the teams could again line up.

Score—Wabash, 12; Rose, 0.

For Wabash, Will Fry, Blair and John Fry appeared to good advantage. Kelsey, Light and O'Brien did effective work for Rose. Especially to Kelsey belongs the honor of preparing the team with less than two weeks' practice for such satisfactory work against Wabash. The result of the game indicated that with suitable preparation Rose could secure an honorable place in the State championship series.

While occupying such an important place in other athletic accomplishments, and having at our disposal the necessary material for a team, our whole athletic duty is not performed until we give foot ball the attention which it deserves.

JUNIOR-SOPHOMORE GAME.

The foot-ball game between Juniors and Sophomores was played Saturday, November 19th, and was won by the latter; score 4—0.

The teams lined up at 2:40 in the following order:

JUNIORS.	POSITIONS.	SOPHOMORES.
McCulloch	Right End	Brown
Anderson	Right Tackle	Miller
Andrews	Right Guard	Smith
Hildreth	Center	Darst
McNaught	Left Guard	Bailey
Brown	Left Tackle	Klinger
Riedel	Left End	Ridgely
Lash	Quarter Back	Stone
Winters	Right Half	Gray
O'Brien	Left Half	Comfort
Hedden	Full Back	Light

Sophomores opened the game with the ball and made a touchdown in four minutes which was accomplished by Gray's splendid run for forty-five yards. Light failed to kick goal. Juniors took the ball but were unable to advance beyond the Sophomore thirty yard line. The remainder of the first half consisted of slow playing by both teams. Sophomores' advantage until near the close of first half, when Hedden punted for thirty yards and time was called with the ball in the center of the field.

In the second half Juniors started with the ball, soon losing on four downs; Sophomores by good end play carried the ball to the Junior ten yard line; at this point the Juniors rallied and made a final effort to score; chiefly by Hedden's punts the ball was advanced to the Sophomore twenty-five yard line, where they lost the ball and all possibility of scoring; Sophomores returned the ball into safe territory when time was called. Score: Sophomores 4, Juniors 0. The Junior team was handicapped early in the game, Lash having his knee badly sprained; having no substitute he played his position to such good advantage that an uninjured man in his place would probably not have affected the final result. Hedden, McNaught and O'Brien for the Juniors, did the best playing. Gray, Comfort and Light doing best work for the Sophomores, the running of Gray being the most important feature of the game.

FRESHMEN VS. HIGH SCHOOL.

On Saturday, December 3, the R. P. I. campus was the scene of a lively game of foot ball played between Terre Haute High School and R. P. I. Freshmen. This game, which was witnessed by about three hundred people, was brought about by a challenge from the High School. The game was called at 2:35, with McGregor and Stone, of the Poly, as umpire and referee. The High School won the toss and took the ball. The teams lined up as follows:

HIGH SCHOOL.	POSITIONS.	FRESHMEN.
Barnes	Right End	Major
Coton	Right Tackle	Jones
Hunt	Right Guard	Mead
Ray	Center	ReQua, Captain
Burns	Left Guard	Whitesides
Dial	Left Tackle	Andrews
Austin	Left End	Sanborn
Williams	Quarter Back	Hewitt
Coultas	Right Half	Jaseph
Steele	Left Half	Ellis
Fitch, Captain	Full Back	Merriman

The High School led off with a V for a good gain, and advanced the ball steadily to within 10 yards of the Freshman goal, when the Freshmen braced up and took the ball on four downs. As regards skillful playing, the High School team was far superior, but the weight of the Freshmen line more than balanced their lack of practice. In

the first half of the game, although no score was made, the High School team had much the best of their opponents and all the playing was done on Freshman ground. In the second half the Freshmen played a game that was a surprise even to their most sanguine supporters. They led off with a V and in a short time Ellis had made a touchdown and ReQua kicked goal; excellent work was done by ReQua and Ellis, and Steele's tackling was admired by all; the Freshmen increased their score and had an excellent prospect of shutting out their opponents, but owing to careless playing on part of the Freshmen near the close of the game, the High School made a touchdown, Fitch kicking goal.

Final score—Freshmen, 22; High School, 6.

NOTES.

The departure from Rose of O'Brien, '94, and Kelsey, '96, takes from us two ardent supporters of athletic progress. The institutions which receive them will doubtless appreciate our loss.

Light, '95, has been elected captain of the foot ball team and McGregor has been chosen manager.

The Butler foot ball team, without the aid of a coach, rank second in the State series.

Several representatives of Rose were at Indianapolis Thanksgiving day to witness the Purdue—DePauw foot ball game; Purdue won by the score 32-6. Six thousand people saw the game.

The spirit of gentlemanly rivalry which was shown in the Wabash-R. P. I. game made the contest none the less interesting, while many advantages of such a game were apparent.

Thanksgiving day the two divisions of the Freshman class played a game of foot ball which was won by Section B. Score, 10-8.

The foot ball team of Leland Stanford, Jr., University has secured the services of Mr. Walter Camp, the celebrated coach.

The Athletic association have in consideration, the equipment of a base ball park for the use of the public.

Springfield, Mass., Nov. 19: Yale 6, Harvard 0; attendance twenty thousand.

New York, Nov. 24: Yale 12, Princeton 0; attendance thirty thousand.

Philadelphia, Nov. 24: University of Pennsylvania 34, Wesleyan 0.

West Point, Nov. 26: Naval Cadets 12, Military Cadets 4.

Detroit, Nov. 24: Cornell 30, Ann Arbor 10.

ROSE LEAVES.

THE BELLSTEDT CONCERT.

Musically considered, the concert of the Bellstedt Military Band, the first entertainment in the Gymnasium Fund course, was a decided failure. The band played with considerable precision (whenever any precision was necessary), and, what is more unusual and praiseworthy, Mr. Bellstedt did not let the tone of his brass instruments predominate to the painful extent which is customary with "military" bands. But the material (it can hardly be called music) which formed the larger part of the program was so extremely trashy that one quite forgot the good points of the playing. In the Funeral March and the Cavæleria "Inter-mezzo," the band attempted too much, and the results were in no way satisfactory.

It is to be regretted that financially the concerts were hardly more of a success; the gymnasium fund made nothing considering the outlay of time and money. The Senior Class will continue the course in the face of this rather discouraging beginning, and in so doing it will show very commendable pluck, and deserve the support of every one; but it is the opinion of the writer that a better class of music would receive much heartier support from the public.

THE "STUDENT COURSE" OF THE THOMSON-HOUSTON ELECTRIC COMPANY.

Since many of the graduates of this Institute intend to do some sort of electrical work, and since a number of these intend, if possible, to spend some time in the "Student Course" of the Thomson-Houston Co., an account of what is meant by the "Student Course" may not be without interest and value.

In the first place, as to its origin. When the Thomson-Houston Company first started, at Lynn, some eleven years ago, young men with practical electrical training were not nearly so plentiful as now; as the company's business increased, more experienced men were needed, and so they found it necessary to take young men, with more or less theoretical training, and put them through a course of work in the factory before permitting them to take charge of any work for the company. They were known as "experts," and the course as the "expert" course. In time, however, it began to be known that there was something to be gained in this work which the best college course could not supply, and so many applied for admission who did not wish or expect to obtain permanent employment with the company. Uneducated men, engineers, motormen, etc., began to take advantage of it, so the company found itself beset with applications from more than it could accommodate. Generosity is not a marked characteristic of any large manufacturing concern, and so this sudden increase in popularity of the course caused a correspondingly rapid decrease in compensation for those taking it, from the fifteen cents per hour of the early days, to the five cents per hour of the present time. It became apparent also, that the title of "expert" was decidedly misleading, and, in the majority of cases, entirely unjustified, so it was changed during the present year to the much more appropriate one of "student."

Now, concerning the actual work of the course. Being intended, primarily, for the training of employes, it is designed mainly to familiarize them with the apparatus of the company; with its construction, with its erection and with its operation. With this object in view, the student is kept at work for from one to eight weeks (according to the importance of the work) in the various departments of the factory—the complete course, as outlined by the company, occupying fifty-three weeks. He is not required to do any machine work, and in some departments, such as that of armature winding, he merely picks up what points he can by watching the regular workmen. In all assembling and testing departments he has an opportunity to do the work himself. The student is usually started in the department of "railway motors," where he is kept for two weeks, during which time he is a source of clear profit to the company of a dollar a day, since he does for fifty cents a day, what any one else would be paid a dollar and a half a day for; and the work is extremely hard and of comparatively little value. After this he will probably be sent to work with the wiring gang; this work is not hard, but is of little value to any one who has had any previous experience in it. The rest of his course will not follow any definite order of arrangement; however, the more important departments in which he will have work, are as follows: Railway generators, transformers, mining, testing of large multipolar generators, "special testing" of railway motors, stationary motors, arc machines, arc lamps, instrument room (calibration of instruments, permeability work, etc.), armature winding. Several weeks are also spent in charge of some part of the "shop plant."

It will thus be seen that while most of the work helps one only to become familiar with the apparatus of the company, still a good deal of it is of more general interest and value—notably that in the department of "special testing," of "stationary motors," and of "alternators," in all of which more or less experimental work is constantly carried on. During all this time the "student" is pulling his check, handing in his time card, and working his ten hours a day like any ordinary employe of the factory; when through with the course, if his work has been satisfactory (and record is kept of this during all the time) he may be offered permanent employment by the company—later he may be notified that he need not appear until eight in the morning, instead of

seven as heretofore, and then his check-pulling, time-card days are over.

As a natural consequence of the number of applicants being so far in excess of the number admitted, it is becoming more and more difficult to gain admission to the course, and in the opinion of many some sort of "pull" is absolutely necessary; and once on the course, the chances for permanent employment are very poor without something of this kind—but good work counts also—here as everywhere.

SOME INTERESTING EXPERIMENTS IN SPARKING DISTANCE.

One of the Junior sections in the electrical laboratory has for the past few weeks been making experiments on the sparking distances of electrical differences of potential of various rather high voltages, and has arrived at some interesting and noteworthy conclusions thereby.

One of the experimenters, who is rather metaphysically inclined, has carried the methods of the laboratory with him in his daily walks up and down Seventh street, and he has been able to determine with considerable accuracy the sparking distances he has seen there. He has plotted some of the interesting curves, laying off the distances as abscissas and the attractiveness as ordinates. In the characteristic curve of one of the members of the Sophomore class, the sparking distance rose to the unusual value of one city block, a very high coefficient of attractiveness being the cause.

He has also plotted curves under static conditions, or when the motion is very slow. Here the pressure is plotted as the abscissa and the resistance as the ordinate. These curves are fully as interesting as the former and especially in one case, when a disruptive breakdown occurred, the dielectric giving away at the fifth rib, but as the lightning arrester performed his duty promptly, further damage was averted.

When a sufficient number of characteristics have been obtained to deduce a uniform law, he intends to tabulate the results in a convenient form for the use of the students on first entering the Polytechnic.

MEETING OF THE I. C. P. A.

The Indiana College Press Association held its semi-annual meeting at the Bates House, in Indianapolis, on Thanksgiving Day, seven papers out of ten in the association being represented. There were two sessions, one in the morning and another in the evening, thus giving the delegates an opportunity to witness the foot ball game.

The morning session, presided over by Mr. A. W. Tracy, of the DePauw *Bema*, was largely of a business nature. The election of officers for the ensuing year resulted as follows:

President, C. C. Pritchard, *Earlhamite*; Vice-President, W. D. Howe, *Butler Collegian*; Secretary-Treasurer, Miss Anna Maddock, *Phœnixian*, of Earlham; Executive Committee, The President of the Association, Chairman; W. W. Wilson, *The Wabash*, and W. M. Blinks, THE TECHNIC.

Papers were read by C. C. Pritchard, on "The Power Behind the Throne," Will D. Howe, on "The Sphere of the College Journal;" Mr. W. F. Howe, of the *Indiana Student*, (State University) took "A Broader Outlook;" Miss Maddock spoke of "The Typical College Journalist," and Mr. W. W. Wilson, of "College Journalism a Training School for Professional Journalists." A general discussion followed the reading of the papers, and the meeting adjourned to meet sometime in the spring, at the call of the Executive Committee. As affecting THE TECHNIC, the principal business done was the dropping of the state correspondence department.

DR. EDDY'S RECEPTION.

The first of a series of monthly receptions, to be given by Dr. and Mrs. Eddy to the students of the Institute, during the winter, occurred on the evening of Saturday, Dec. 10th. They (Dr. and Mrs. Eddy) were assisted in receiving by the ladies of the Faculty and by a number of other young ladies without that distinction. A large number of the students were present, and enjoyed the evening immensely. Dr. and Mrs. Eddy can feel assured that their kindness and hospitality are appreciated.

DIFFERENTIALS.

The button is coming.

Hard work, unusually hard work, is the order of the day.

McCulloch, '94, is the enthusiastic possessor of a new pneumatic wheel.

Married, on November 29th, Albert V. Manchester and Stella May Noble.

Relissing, '96, was called home this month on account of the death of his father.

It was, alas! a Junior who was overheard to ask something about "thermo-heat."

The enterprising student is now busy putting his "pipe lines" in good condition for the Christmas exams.

The Seniors won't say how much it was, but there is a general curtailment of personal expenses all round.

Brant, '95, has decided to go to Champaign, Ill., and take a course in architecture at Illinois State University.

The Freshmen turned out in full force at the late Butterfly tea and some other classes were pretty well represented.

Ten Freshmen have departed this Institute life so far; they evidently thinking that discretion was the better part of valor.

THE TECHNIC wishes to state to the Juniors that it has reliable information to the effect that the storage batteries are here.

The many friends of Mead, 96, were pained to learn of the death of his father soon after the serious illness was announced.

One of the younger Professors has been caught in the act of sending Huyler's to one of his fair friends. Will wonders never cease?

Considerable complaint is being made about the electric lights in the wood-shop. It is said that the only advantage they possess over gas is that they cannot be blown out.

The Christmas examinations commence on Monday, the 19th, and end on Thursday. Friday morning there will be a grand union funeral service.

F. W. Childs, '96, has discontinued his studies and returned to his home in Fort Dodge, Ia. The Institute has lost one of its greatest kickers (record 8′ 5″).

The Poly is not usually put down as a classical school, but it is a fact that the Freshmen have already completed Greek and are now making rapid progress in Latin.

Prof. Wickersham neatly stopped an attempt at "coaching" in a French recitation. He simply remarked in a very pointed way that "the French word for prompter was 'souffleur.'"

Two new Pullman coal cars, with air-brakes, vestibules, buffets, and all other improvements are being built in the wood shop, to take the place of the very dilapidated ones now in use.

A set of charts, nearly two hundred in number, were recently received from Washington. This recent acquisition completes our list of charts as prepared by U. S. Coast and Geodetic Survey.

Patterns are being made for the improved 4,000 watt gramme dynamo designed last year. Let's see, designed last year, patterns this year, castings next, machine work next, and the complete dynamo in 1900.

The work of the Senior civil class this term deserves special mention; the recent change in the course gives them a few extra hours each week, and the amount of work accomplished has greatly exceeded that of any previous class.

The address of Prof. Gray on "The Inventors of the Telegraph and Telephone," delivered at the celebration of the beginning of the second century of the American Patent System, held in Washington, D. C., in April, 1891, has been published by the executive committee. It is a most interesting document. Prof. Gray kindly remembered THE TECHNIC with a copy.

H. W. Bigelow '93, has been compelled, on account of ill health, to withdraw from the Institute for the rest of the year. His many friends will be glad to know that he expects to return next September and enter the class of '94.

A party of Coates College young ladies, chaperoned by one of the faculty (theirs, not ours) recently took such a long Sunday afternoon stroll that Monday had passed ere they returned, a fact that caused some commotion in the party. Our special correspondent, in the hurry incident to sending us the account down on the trolly wire misspelled the latter date, according to our spelling-book, but we cheerfully correct the error.

A general meeting of the school was called on Tuesday of last week to see if a final settlement of the school button question could not be reached. By vote of those present it was decided to accept a button with the single letter R on the face. But when it came to settling just which of the several designs should be taken, the meeting was divided, and the matter was allowed to go over for a week. It is to be hoped that a final decision can be reached at that time.

The report of the musical critic in another column, upon the recent concert, may be all right from his lofty perch, but, nevertheless, a great many of us enjoyed the "trash" quite as much as if the grade had been way up somewhere on the opera house roof.

The Indiana College Association will hold its annual meeting at Indianapolis, commencing Monday, December 26th. The members of the association are divided into groups according to the colleges which they represent, and only the representatives from two or three colleges read papers at any one meeting. Rose is not on the program this year.

WITH APOLOGIES.

Examination days are come, the saddest of the year,
Of wailing flunks, and packing trunks and minds both brown and sear.
Heaped in the pockets of his clothes, the cribs can't reach his head;
They rustle to his every move, and to the professor's tread.
His thoughts of using them are flown and from him hope's last ray,
Yet, in the exam. room he scribbles on th roughout the gloomy day.

THE COLLEGE WORLD.

Bowdoin has adopted a college pin.

DePauw is discussing the advisability of a college button.

The new law school building at Cornell has been completed.

The graduate students at Brown University outnumber the Senior class.

Chicago University is to have a two hundred thousand dollar gymnasium.

The Senior class of Cornell is to build an athletic club house as a memorial.

President Burroughs, of Wabash, talks of introducing the "College Senate."

No "conditioned" student is allowed to take part in any of the athletic contests at Wesleyan.

The graduates and undergraduates of Harvard have subscribed $22,550 for a new college reading room.

The two first Chinese women to enter an American college have entered the medical school at Ann Arbor.

Prof. Waldo has entered the University Extension work and will offer courses in this work.—*DePauw Record.*

The faculty and students of the University of Chicago are required to wear the cap and gown at all public exercises.

Ten alumni of the University of Pennsylvania will erect a $10,000 athletic club house for the university. We cannot expect our alumni to do as much but every little counts.

John D. Rockefeller has given $35,000 to Vassar College for the completion of a new dormitory.

The matter of a distinctive button or pin is being agitated by colleges all over the country.

Mr. Amos Haridon has given Purdue thirty-five thousand dollars with which to build new mechanical laboratories.

The department of Architecture of the Massachusetts Institute of Technology has a new five story building devoted exclusively to its use.

It is said that Senator Stanford has offered to build chapter houses for all Greek letter fraternities organized at Stanford University.

It is quite probable that the alumni of Worcester Polytechnic will hold a meeting in Chicago some time during the Columbian Exposition.

Daily papers are now published at Harvard, Yale, Princeton, Brown, Cornell, Leland Stanford, University of Wisconsin, and University of Michigan.

The engineering students of Stanford University have decided to issue a semi-annual magazine. S. K. Kenower, formerly '93 of Rose, is on the staff.

The faculty of Amherst has been very justly censured for issuing a partisan manifesto, with the intention of influencing the votes of the students.

The Missouri State University team declined to play foot ball with the team from the Nebraska State University because there is a colored man on the latter team.

Six hundred and eighty-nine was the number of diplomas granted at Ann Arbor last June. This is the largest class ever graduated from an American institute.

New York Harvard men have already subscribed twenty-five thousand dollars towards the erection of a "Harvard House." The building and grounds will cost over $70,000.

Princeton Glee Club will take a trip during Christmas vacation, visiting Louisville, Indianapolis, Chicago, Milwaukee, St. Paul, Minneapolis, Omaha, Kansas City, St. Louis, Columbus and Pittsburg.

A CORRECTION.

It has been found that, owing to an error in the July issue of the W. P. I., the comparison of the courses of study in the Worcester Polytechnic, the Massachusetts Institute of Technology, and the Rose Polytechnic, was made upon a wrong basis, and we, therefore, make haste to correct our unavoidable mistake.

"The figures given below compare the total number of hours devoted to *instruction* in each subject for the whole course," and the time devoted to thesis work is not included. The time for thesis work being five entire weeks in Rose:

	Mass. Inst.	W. P. I.	R. P. I.
No. 1. Mathematics, pure and applied	590	595	864
No. 2. Physics and Chemistry	360	458	377
No. 3. Modern Languages, Literature, History and Political Science	450	527	414
No. 4. Drawing, Machine Design, Thermodynamics, Engineering Laboratory work	811	612	1,163
Studies not common (Electricity in Rose)	75	57	277
Totals, not including shop practice	2,286	2,249	3,095
Shop practice	382	2,156	1,203
Military drill	90		
Grand totals	2,758	4,405	4,298

It will be seen from the above calculation that, omitting shop practice, the student here spends *at the institute* 809 hours more than students at the Boston Tech and 846 hours more than students at the Worcester Polytechnic.

Since the error in our October issue was no fault of our own it would be interesting to have the W. P. I. make a calculation of the courses, "made on the basis of two hours of study for each prepared exercise," and for that purpose we publish a revised calculation of the course at Rose, thesis time being omitted.

No. 1. Mathematics, pure and applied	2,592
No. 2. Physics and Chemistry	859
No. 3. Modern Languages, Literature, History and Political Science	1,242
No. 4. Drawing, Machine design, Thermodynamics, Engineering and Physical Laboratory work	1,221
No. 5. Electricity	569
Total, not including shop practice	6,483
Shop practice	1,203
Grand total	7,686

Bowdoin is to have a new scientific building.